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# THE BEAN BAG

**A newsletter to promote communication among research scientists  
concerned with the systematics of the Leguminosae/Fabaceae**

Number 35

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## From the Editors

Charles R. Gunn and Joseph H. Kirkbride, Jr.

The BB is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal the BB is issued in May and November of each year and features six columns: From the Editors, News (meetings, major events, announcements, etc.), Latin American Legume Report, Nodulation and Nitrogen Fixation (new nodulation records), Gleanings, and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return. If you have news about legume systematics, send it to us for this column. The Recent Legume Literature column contains published research papers of specific interest to BB Readers. Recent is defined as one year old. We rarely will publish a citation that is more than one year old. Specific interest to BB Readers is defined as research papers of interest to a world wide group of legume systematic botanists. We encourage Bean Bag (BB) Readers to send us notices, observations, etc.

Diacritical marks can now be placed in the BB. If such marks should be placed in your name, address, publications, etc., please let us know. We are especially interested in correcting our Directory. Thank you.

Electronic copies of *The Bean Bag* and the Directory can be obtained from TAXACOM, a free online service for biosystematics and biogeography at the Buffalo Museum of Science, Buffalo, New York, USA. The system operator is Dr. Richard H. Zander. TAXACOM is available 24 hours daily at telephone number 716-896-7581 using 2400/1200/300 bps, 8 data bits, 1 bit stop, and no parity. Outside of the USA use CCITT at 2400 bps, otherwise use Bell protocols.

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## The Bean Bag is Changing

Charles R. (Bob) Gunn

Your *Bean Bag* (BB), first issued by R.S. Cowan and C.R. Gunn, has been distributed twice yearly—May and November—since May 1975. The genesis of the BB occurred at the First International Congress of Systematics and Evolutionary Biology (Boulder, Colorado). At an ad hoc meeting of legume taxonomists, Tom Elias (then Director of the Carey Arboretum, New York Botanical Garden) volunteered to produce a legume newsletter, and distributed a questionnaire to potential readers worldwide. When his administrative duties forced him to give up the newsletter (before its first issue), Cowan and Gunn assumed the editorial duties. They printed and distributed the first issue using the results of the questionnaires sent out by Elias. It was Mary Kalin Arroyo who gave us our name—*The Bean Bag*, and Alice Tangerini developed our first mast head.

November 1981 saw the second change of editorship: Cowan resigned, and James Lackey took his place. Lydia Poole handled the mail and prepared copy, and Lynda Chandler designed the Directory cover. Lackey, Poole, and Chandler made career advancements which took them out of our laboratory, and the third editorship change was made: Lackey resigned and was replaced by J.H. Kirkbride, Jr., with the November 1986 issue. Kirkbride brought the BB into the computer age. A database of readers was created, and the directory and mailing labels are generated from the database without further editing. Copy for the BB is now produced on a laser-jet printer making the inclusion of accents possible.

Another change is now at hand. I am retiring to devote full time to producing the third and final volume, covering the Faboideae, in my trilogy on the fruits and seeds of the Fabaceae. With the November 1992 issue, the BB Editors will be Kirkbride and John H. Wiersema (ARS Nomenclaturalist) with the assistance of Carole A. Ritchie.

## A Homonymous Publication

The Nebraska Dry Bean Growers Association (NDBGA) has their headquarters in Scottsbluff, Nebraska. The NDBGA objective is "to serve as a forum where growers can work together to achieve a more stable dry bean industry in Nebraska." It encourages research and informational programs in dry bean [*Phaseolus vulgaris*] production, promotion, and utilization, and also acts as an advocate for and provides services to growers of dry beans. Issues that impact on the dry bean industry, both

at national and state levels, are addressed by the Association. In the state of Nebraska, the average yearly production of dry beans is worth approximately US\$100,000,000.

The NDBGA publishes a sixteen page newsletter four-times each year—Spring, Summer, Fall, and Winter—entitled *The Bean Bag*. The tenth volume is being published this year. A significant portion of the newsletter is devoted to advertising. The articles are a blend of subjects: Practical agriculture, marketing, general information on beans, and NDBGA news and information.

The Fall 1991 issue contained the following articles: Taxes

and Marketing Dry Beans, Spilling the Beans, Planted Acreage for 1991, Corns and Beans, Growers Association News, Growers Association Field Tour, Newsbriefs, Bean Board Expands Program, Nebraska Hosts Bean Council, What It Takes to be Number One, Tare: Determinator of Quality, Overcome Dull Knife Problems, Promoting Beans in Japan, Treated Seed and Beans, Herbicide Drift, A Look at Soil, Compaction, Conservation - The 90 Farm Bill, *Fusarium* Yellows in Nebraska, Bean Update, and Bean Event Calendar.



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## SEMINA

### A New Publication

The first three issues of a new publication, *SEMINA*, ISSN 0188-6606, have appeared. It will publish articles on seed taxonomy, morphology, anatomy, ontogeny, genetics, ecology, physiology, chemical composition, and management. Each issue consists of one or more articles: 1) Morfología de las semillas de *Inga jinicuil* Schlect. Una planta leñosa tropical de importancia agroforestal; 2) Formato descriptivo para la caracterización morfológica de semillas de leguminosas de importancia agroforestal; and, 3) Métodos para determinar la viabilidad y el vigor de las semillas forestales, and Causas que originan el envejecimiento de las semillas de las plantas leñosas.

*SEMINA* is published by the Centro de Investigaciones en Bosques Tropicales, Campeche, Mexico. For further information, contact: M.C. Aníbal Niembro-Rocas, Director Científico, Centro de Investigaciones en Bosques Tropicales, Universidad Autónoma de Campeche, Av. Agustín Melgar s/n, Apartado Postal 204, Campeche, Campeche, México, C.P. 24030, telephone and FAX: 981-12967.

### Gleanings

AGUILAR has two nodule papers in press: Qualitative study of legume nodulation in Philippine spp. and anatomical features of same. Also updating nomenclature of Papilionaceae 1990-92 and Caesalpiniaceae 1992-94 in the Philippines. Needs seeds of tropical legumes and reprints of same and offers herbarium specimens of flowering plant families.

ASMUSSEN (new Reader) is working on the population biology of *Lathyrus* for Flora Nordica.

BARHAM (new Reader) is revising *Indigofera* for Flora of Thailand and needs same.

BRIZUELA has a paper in press on "*Prosopis burkartii* and its possible hybrid origin" and is working with the floral biology of *Macroptilium*, *Phaseolus*, and *Vigna*.

CHO and CHOI (both new Readers) are conducting biosystematic studies of *Indigofera kirilowii* and *Vicia unijuga* and need same as well as *Hedysarum* spp. Offer Korean legumes.

CHOI (new Reader), see CHO.

CORBY is pleased to report that he has a seed of *Mora megistosperma* and does not need additional seeds. It is the largest legume seed with the following vital statistics: Dimensions, 17 X 14 X 7.5 cm; weight, 645 g fresh and 334 g dry; gross volume, 710 cc; buoyancy cavity, 190 cc; axis, with well developed plumule growing into cavity, 9.5 cm long.

DING (new Reader) has started Ph.D. study on systematics and evolution of the Galegeae. Needs current literature on Galegeae.

DUKE wants to learn if anyone knows of the use of legume nodules as food or medicine. It appears that heme may be synergistic with zidovudine in fighting AIDS.

EZE has started to study the effects of water stress and soil compaction on nodulation of *Vigna unguiculata*.

FERGUSON continues with pollen of Loteae/Coronilleae and is collaborating with LARSEN and LARSEN on Old World *Bauhinia* palynology. Has a large number of unpublished pollen measurements and micrographs from taxa in the Caesalpinioideae and Papilionoideae available for

consultations by colleagues.

FRANCISCO-ORTEGA has the paper "Use of discriminant function analysis to study diploid and tetraploid cytotypes of *Lathyrus pratensis*" in press and is working with P. Mendez and M. Fernandez-Galvan on the germplasm of *Psoralea bituminosa* in the Canary Islands.

GALETTO is working with pollination, nectar, and nectar anatomy of Caesalpinioideae. Has a paper in press on the floral biology of *Caesalpinia gilliesii*.

GIGA has a paper in press on *Vigna* infestation by *Callosobruchus rhodosianus*.

GILL has a paper in press on use of Fabaceae in the ethnomedicinal practices of Nigeria and is working with the allelopathic effects of leaf stem and root aqueous extracts on germination and radicle length in *Vigna unguiculata*.

GOMEZ-SOSA published "Novedades para la Flora de San Juan: Papilionoideae (Leguminosae)" in *Parodiana*, volume 7, 1991.

GUNN would like to thank everyone who either helped to prepare and publish the BB or contributed material to the first 35 editions. Good luck to KIRKBRIDE, WIERSEMA, and RITCHIE.

HARDER has two papers in press on chromosome counts in *Psophocarpus* and on the origin of cultivated *Psophocarpus tetragonolobus*. Is working with the legumes of tropical Africa, and offers seeds of *Psophocarpus lancifolius* and *P. scandens* from Zaire.

HEGNAUER has a 4-5 year project: Volume XI, Leguminosae in *Chemotaxonomie der Pflanzen*.

HIDALGO (new Reader) is establishing a core collection of *Phaseolus vulgaris* germplasm, and offers cultivated species of same.

HUGHES continues working on *Leucaena* and has been in Mexico and Central America. Offers seeds of a wide range of Central American woody legumes.

IDRIS (new Reader) at the Department of Biological Sciences, Bayero University, P.B.M. 3011, Kano, Nigeria needs literature on bambara groundnut (*Vigna subterranea*, formerly *Voandzeia subterranea*).

JIMENEZ BULLA has a new publication: "Haba Criolla" *Canavalia ensiformis* (L.) DC. (Fabaceae-Faboideae), 533 pp., Secretaria Ejecutiva Convenio Andrés Bello. Now is working with the legumes of Parque Nacional Natural Chingaza (Cundinamarca-Meta), Colombia.

KAYODE is now studying the soil enrichment attributes of fast growing leguminous trees. Needs information on the agroforestry potential of *Acacia tortilis*, *Albizia* spp., *Prosopis* spp., and *Sesbania* spp., and offers seeds of tropical leguminous trees.

KEARNS (new Reader) is working with legumes for *Flora of North America*.

KLITGAARD is continuing revision of *Platymiscium* and has started on a cladistic analysis of tribe Dalbergieae. Needs FAA, PFA fixed, or fresh material of any *Platymiscium* sp. for ontogenetic studies.

KOLTERMAN (new Reader) has a new species of *Calliandra* from Puerto Rico in press.

LISTON is studying the molecular phylogeny of the Galegeae, needs Galegeae seeds, and offers *Astragalus* seeds.

MA is working with the Chinese genera of the Papilionaceae. Needs legume materials and papers for India and East Pakistan.

MAASS needs help in identification and determination of *Bauhinia*, *Canavalia*, *Cratylia*, *Dysolobium*, *Eriosema*, *Erythrina*, *Glycine*, *Medicago*, *Rhynchosia*, *Rovelia*, *Trifolium*, and *Vicia*. Offers herbarium specimens of selected legumes and germplasm in research quantities of same to users. The Editors were unable to find the genus *Rovelia* in generally used references such as Index Kewensis.

MENDEZ (new Reader) is working with legumes of Canary Islands: forage, alkaloids, and coumarins. Needs seeds and data on *Bituminaria bituminosa* and general data on forage legumes for arid and semiarid zones. Offers data and small seed sample of *B. bituminosa* in Canary Islands and also other forage endemics of *Adenocarpus*, *Chamaecytisus*, and *Teline*.

MIOTTO is working with *Lathyrus* and *Vicia* of Brazil, needs species of same, and offers duplicates of same from southern Brazil.

PREDEEP (new Reader) is studying the systematics of Phaseoleae—Clitoriinae, Diocleinae, Erythrinae, Glycininae, and Ophrestiinae—in India. A testa study using SEM will be included. Offers dry specimens of legumes from India.

QUEIROZ has finished his MS thesis, and two papers will be published: Revision of *Cratylia* and the naming of a new species. Will be working with pollination and evolution of Diocleinae, with fodder legumes of Caatinga, Brazil, and with ALLKIN on pollination and taxonomy of *Moldenhawera*.

RAMIREZ-DELGADILLO (new Reader) is studying the wild *Phaseolus* spp. of Jalisco, Mexico.

RANGAPPA is evaluating *Phaseolus* germplasm for biotic and abiotic stress factors.

REYNOSO-DUEÑAS (new Reader) is working on the legumes of Jalisco, Mexico. Needs named legume herbarium specimens and offers sheets and seeds of Mexican legumes.

RICO-ARCE has a chromosome count paper in press: *Albizia*, *Harvardia*, and *Pithecellobium* and a new combination for *Albizia*. Has started to revise Neotropical *Acacia*—Filicinae, Aculeiferum, and *Acacia*. Will name Neotropical Acacieae and Ingeae (except *Inga*).

RODEROS has started three projects: Isozyme and chloroplast DNA variation in *Vigna umbellata* and related species; plant lectins from selected legumes; and, biosystematics of *Acacia mangium*. Needs literature, seeds, and freshly dried leaf material of *Vigna mungo*, *V. radiata*, *V. umbellata* and *Acacia mangium*. Offers seeds of *Vigna* spp. listed above, *Phaseolus lunatus*, and *P. vulgaris* from the Philippines.

STEINER is finishing an intraspecific classification of 130 accessions of *Lotus corniculatus* and a classification of 33 different *Lotus* spp. based on seed high-salt soluble polypeptides. This classification is being compared with one based on arbitrary amplified primers.

SHARMA is investigating environmental pollution and cuticular dynamics in legumes.

SPRENT has two papers in press on the lack of nodules in *Acacia brevispica* and genetic variation among populations of *Gliricidia sepium* and *G. maculata*. Has started working on the genetic variation

in *Chamaecrista* in relation to nutrient acquisition systems, and needs seeds of *Chamaecrista* spp.

STERGIOS needs *Aldina* from Amazonia and *Campsiandra* from Brazil, Colombia, Guiana, Peru, and Suriname, and offers collections from Venezuelan Guayana (Bolívar and Amazonia).

STIRTON needs viable seeds of *Acosmium* and *Atelia*. Dried leaves of any Sophoreae should be sent to DOYLE for DNA studies.

SURESH (new Reader) is working with fuel-wood trees of India.

TINDALE has completed selected species in *Acacia* section *Juliflorae* for Flora of Australia and is now working on bipinnate *Acacia* for same, projected completion June 1992.

TISSOT (new Reader) is studying the inflorescence of Caesalpinioideae and Mimosoideae.

THOTHATHRI is preparing the legumes for the Flora of West Bengal. Needs seeds of Asiatic Dalbergieae, Millettieae, and Phaseoleae: Cajaninae. Offer reprints.

VANDERBORGHT offers small quantities of seeds of 150 taxa of Phaseoleae, mainly wild *Phaseolus* and *Vigna*, with detailed passport data, and needs seeds of the same.

VAZ has two publications in press on the *Bauhinia* species of Brasília, Distrito Federal, Brazil, and on the vining *Bauhinia* species in the state of Rio de Janeiro, Brazil. She is beginning a taxonomic revision of the vining *Bauhinia* species (sects. *Caulotretus* and *Schnella*) in Brazil and compiling a checklist of *Bauhinia* taxa in Brazil. She needs herbarium material of *Bauhinia* from Brazil with flowers and/or fruits and literature on *Bauhinia*, and offers reprints of her publications on Brazilian *Bauhinia* and to make identifications of *Bauhinia* herbarium material received as gifts. She met with WUNDERLIN at the University of South Florida, Tampa, in January 1992, and had some very pleasant and productive consultations with him.

VIJAYALAKSHMI needs *Psophocarpus palustris* and offers *P. tetragonolobus*.

WEDER is working with protease inhibitors of *Acacia*.

WILLIAMS (new Reader) is working with *Arachis* germplasm and ethnobotany and needs landraces cultivated by indigenous farmers.

## RECENT LEGUME LITERATURE

Eds. Note: Author names in all capital letters are BB Readers. Their full names and addresses are listed in the November 1991 BB Directory. Correspondence about their articles should be sent directly to them.

ACEBES-GINOVES, M. del Arco Aguilar, and W. Wildpret de la Torre. 1992. Revisión de *Chamaecytisus proliferus* (L.fil.) Link en Canarias. *Vieraea* 20: 191-202.

Andrews, M., FARIA, S.G. McInroy, and SPRENT. 1990. Constitutive nitrate reductase activity in the Leguminosae. *Phytochemistry* 29: 49-54.

Aymard C., G., and CUELLO A. 1991. Dos nuevas especies Neotropicales del género *Canavalia* (Papilionoideae: Phaseoleae: Diocleinae). *Biollania* 8: 87-92.

Arroyo Valencia, J.E. 1991. Revisión taxonómica de *Galactia* P. Br. (Leguminosae) en ejemplares del

Centro Internacional de Agricultura Tropical (CIAT). Undergraduate thesis, Universidad del Valle, Cali, Colombia, 150 pp., in Spanish.

BARNEBY. 1991. *Sensitivae Censitae*: A description of the genus *Mimosa* Linnaeus (Mimosaceae) in the New World. Available from: Mimosa, Scientific Publications Department, The New York Botanical Garden, Bronx, New York 10458-5126, USA. 477 spp., 835 pp., keys, maps, illustrations: US orders \$138.40; non-US orders \$142.10. All orders prepaid and including postage and handling - payment by check, MasterCard or VISA.

Barreto, A. and YAKOVLEV. 1991. De generis speciebus *Chamaecrista* Moench (Fabaceae: Caesalpinioideae) in Cuba. Novit. Syst. Pl. Vasc. 28: 95-102.

BEHNKE. 1991. Nondispersive protein bodies in sieve elements: A survey and review of their origin, distribution and taxonomic significance. IAWA Bull., n.s., 12(2): 143-175.

Chapman, A.D. 1991. Australian Plant Name Index, 4 vols. Australian Government Publications Service: Canberra. Bibliography and nomenclatural details of all names published for vascular plants in Australia. No taxonomic content, i.e., names in this publication are neither integrated nor linked by taxonomic synonymy.

Chehaibar, T. and GRETHER. 1990. Wood anatomy of *Mimosa* (Leguminosae). Bol. Soc. Bot. Mex. 0(50): 3-18.

CHOI. 1991. Morphological variation and taxonomy of *Desmodium podocarpium* (Leguminosae) in southern Korea. Kor. Jour. Pl. Tax. 21(1): 55-69.

Chung, Y. and S. Lee. 1990. A palynotaxonomic study of the *Sophora* group (Papilionoideae: Leguminosae: Sophoreae). Kor. Jour. Pl. Tax. 20(4): 257-282.

CRISP. 1991. Contributions towards a revision of *Daviesia* Smith (Fabaceae: Mirbelieae). II. The *D. latifolia* group. Aust. Syst. Bot. 4(2): 229-298.

CRISTOFOLINI. 1991. Taxonomic revision of *Cytisus* Desf. section *Tubocytisus* DC. (Fabaceae). Webbia 45(2): 187-229.

CUELLO A. and G. Aymard C. 1991. Contribuciones a la Flora del Estado Portuguesa, Venezuela: El género *Desmodium* (Leguminosae: Papilionoideae: Desmodieae: Desmodiinae). Biollania 8: 47-59.

Díez, M.J. and FERGUSON. 1990. Studies of the pollen morphology and taxonomy of the tribes Loteae and Coronilleae (Leguminosae: Papilionoideae). 1. *Anthyllis* L. and related genera. Lagasalia 16(1): 77-94.

Edwards, T.J. and F.G. Norris. 1990. Notes of the genus *Buchenroedera* (Fabaceae) in Natal. So. Afr. Jour. Bot. 56(3): 275-284.

FERGUSON. 1991. Common features of pollen and exine ornamentation and stratification of some Paleotropical and Neotropical *Bauhinia* L. species (Leguminosae: Caesalpinioideae). In S. Chanda, ed., Current Perspectives in Palynological Research. Jour. Palynol. (India) 26-27: 73-82.

Förther, H. and PODLECH. 1992. Revision der *Ononis natrix*-Gruppe (Leguminosae) von Makaronesien, Nordafrika und dem angrenzenden Westasien. Mitt. Bot. Staatss. München 30: 197-296.

FRANCISCO-ORTEGA, M. Fernandez-Galvan, and A. Santos-Guerra. 1991. A literature survey (1696-1991) on the fodder shrubs tagasaste and escobon (*Chamaecytisus proliferus* (L.fil.) Link sensu

*lato*) (Fabaceae: Genisteae). New Zealand Jour. Agr. Res. 34: 471-488.

FRANCISCO-ORTEGA, M. Fernandez-Galvan, and A. Santos-Guerra. 1992. On the nomenclature of *Chamaecytisus mollis* (Cav.) Greuter & Burdet (Fabaceae: Genisteae) and its distribution in the Canary Islands. Lectotypification of *Spartium molle* Cav. and *Cytisus albidus* DC. Candollea 47: 5-13.

FRANCISCO-ORTEGA, M.T. Jackson, A. Santos-Guerra, and M. Fernandez-Galvan. 1991. Historical aspects of the origin and distribution of tagasaste (*Chamaecytisus proliferus* (L.fil.) Link ssp. *palmensis* (Christ) Kunkel), a fodder tree from the Canary Islands. Jour. Adelaide Bot. Gard. 14: 67-76.

Genise, J., PALACIOS, HOC, M.A. Agullo, and P. Picca. 1991. Some new aspects of the floral biology of *Prosopis* (Leguminosae: Mimosoideae): behavior of the main insect visitors in West-Chaco (Argentina). Bull. Internat. Group Study Mimosoideae 19: 130-145.

GUNN, WIERSEMA, RITCHIE, and KIRKBRIDE. 1992. Families and genera of spermatophytes recognized by the Agricultural Research Service. USDA, ARS Tech. Bull. 1796, 500 pp. A copy will be sent to each BB Reader.

Hacker, J.B. 1990. A guide to herbaceous and shrub legumes of Queensland. University of Queensland Press, PO Box 42, St. Lucia, Queensland, Australia 4067. R.R.P.: \$79.95. ISBN 0 7022 2257 7. An excellent reference on 639 native or introduced legumes of Queensland. Taxonomic in organization and well-researched, this book is designed to appeal to a wide range of professionals, students, and naturalists interested in legumes. Following a key to all Queensland legume genera, including trees, they are arranged alphabetically. Generic entries include a brief description and a key to the species treated. Each species entry includes the scientific name (unfortunately without authorship); occasionally an important synonym; common names; a complete description; distributional information on occurrence in Queensland districts, Australian states, and elsewhere; notes on grazing potential, ecology, or nodulation; and, linkage to 340 literature references listed in an appendix. Most entries also include a color plate, or sometimes a line drawing, illustrating some feature of the plant.

HERNANDEZ. 1991. Taxonomía distribución geográfica y biología reproductiva de *Calliandra calothyrsus* (Leguminosae: Mimosoideae), una especie con potencial agroforestal. Anales Inst. Biol. UNAM, ser. bot., 62(2): 121-132.

Harden, G.J., ed. 1991. Fabaceae (= Leguminosae). In Flora of New South Wales, vol. 2, pp. 311-526. University of New South Wales Press: Kensington. Individual genera treated by a variety of authors, including CRISP, WESTON, and TINDALE.

Hnatiuk, R.J. 1990. Census of Australian Vascular Plants. Australian Government Publications Service: Canberra. List of recognized names of Australian vascular plants, including all legumes, plus distribution by region. No taxonomic content, i.e., names in this publication are neither integrated nor linked by taxonomic synonymy.

HUGHES. 1991. Two new subspecies of *Leucaena* (Leguminosae: Mimosoideae) from Guatemala. Kew Bull. 46(3): 547-557.

HUGHES. 1991. *Leucaena* improvement through use of lesser-known species. Leucaena Res. Rep. 12: 98-100.

James, A.T., and LAWN. 1991. Inheritance of selected traits in accessions of *Vigna vexillata* (L.) A. Rich. of Australian and African origin. Aust. Jour. Bot. 39: 415-429.

KLITGAARD. 1991. Ecuadorian *Brownea* and *Browneopsis* (Leguminosae: Caesalpinioideae): Taxonomy, palynology, and morphology. Nordic Jour. Bot. 11(4): 433-449.

- Kurbatskii, V.I. 1991. New and rare species of the family Fabaceae Lindley for the Flora of Siberia. *Izv. Sib. Otd. Akad. Nauk SSSR Sib. Biol. Zh.* 0(3): 35-37.
- LARSEN, K. and S.S. LARSEN. 1991. Notes on the genus *Bauhinia* (Leguminosae: Caesalpinioideae) in Southeast Asia. *Nord. Jour. Bot.* 11: 629-634.
- LAVIN, S. Mathews, and HUGHES. 1991. Chloroplast DNA variation in *Gliricidia sepium* (Leguminosae): Intraspecific phylogeny and tokogeny. *Amer. Jour. Bot.* 78(11): 1576-1585. Tokogeny: Reticulate relationships occurring among sexually reproducing individuals within a population or species.
- MA. 1991. Notes of *Sphaerophysa* from China. *Acta Bot. Yunnanica* 13(4): 380-382.
- MAXTED. 1991. Intergeneric relationships between *Psophocarpus* Necker ex DC. (Phaseoleae: Leguminosae) and its allies. *Candollea* 46(2): 367-382.
- MAXTED, M.A. Callimassia, and M.D. Bennett. 1991. Cytotaxonomic studies of Eastern Mediterranean *Vicia* species (Leguminosae). *Plant Systematics and Evolution* 177: 221-234.
- MAXTED. 1992. New combinations and names in the genus *Vicia* (Leguminosae: Vicieae). *Kew Bulletin* 47(1): 129-130.
- MENDEZ, M. Fernandez, and A. Santos. 1990-91. Variedades de *Bituminaria bituminosa* (L.) Stirton (Leguminosae) en el Archipélago Canario. *Pastos* 20-21: 157-166.
- MISSET and C. Fontenelle. 1992. Protein relationships between natural populations of *Ulex europaeus* and *U. gallii* (Faboideae: Genisteae) and their hybrids. *Plant Syst. Evol.* 179: 19-25.
- PALACIOS, BRIZUELA, A.D. Burghardt, E.M. Zallochi, and MOM. 1991. *Prosopis burkartii* and its possible hybrid origin. *Bull. Internat. Group Study Mimosoideae* 19: 146-161.
- Perrino, P., G. Maruca, R.N. Lester, V. Linsalata, V. Lattanzio, and HANELT. 1991. Chemotaxonomic relationship among species of *Vicia* section *Faba*. *Feddes Repert.* 102(5-6): 319-334.
- PODLECH. 1990. Die Typifizierung de altweltlichen Sektionen de Gattung *Astragalus* L. (Leguminosae). *Mitt. Bot. Staatss. München* 29: 461-494.
- PODLECH. 1990. Revision von *Astragalus* L. sect. *Platyglottis* Bunge (Leguminosae). *Mitt. Bot. Staatss. München* 29: 541-572.
- PODLECH. 1991. The systemtics of the annual species of the genus *Astragalus* L. (Leguminosae). *Flora et Vegetatio Mundi* 9: 1-8.
- PREDEEP and M.P. Nayar. 1990. A new species of *Dumasia* DC. (Leguminosae) from Burma. *Jour. Jap. Bot.* 65(4): 109-111. In English with Japanese summary.
- PREDEEP and M.P. Nayar. 1990. Notes on *Shuteria ferruginea* (Benth.) Baker (Leguminosae: Papilionoideae). *Jour. Jap. Bot.* 65(12): 369-373. In English with Japanese summary.
- PREDEEP and M.P. Nayar. 1991. Novelties in the genus *Dumasia* DC. (Leguminosae: Papilionoideae). *Jour. Jap. Bot.* 66(5): 275-279.
- Qian, Y.Y. 1990. A new species of *Cassia* from Yunnan. *Acta Bot. Austro Sinica* 6: 23-25. Cassia

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*lancangensis* Y.Y. Qian, scientific name, diagnosis, description, and type in Latin, and text in Chinese.

RICO ARCE. 1991. New species, combinations and synonyms for *Zygia*, *Cojoba*, *Marmaroxylon* and *Pithecellobium* (Leguminosae: Mimosoideae: Ingeae). Kew Bull. 46(3): 493-521.

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